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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,630	10/04/2006	Mark Jozef Willem Mertens	NL040391US1	2046
24737	7590	02/16/2010	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			KURR, JASON RICHARD	
P.O. BOX 3001			ART UNIT	PAPER NUMBER
BRIARCLIFF MANOR, NY 10510			2614	
MAIL DATE		DELIVERY MODE		
02/16/2010		PAPER		

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/599,630

Filing Date: October 04, 2006

Appellant(s): MERTENS, MARK JOZEF WILLEM

Kevin C. Ecker
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 4, 2009 appealing from the Office action mailed May 22, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

(US 7,349,548 B2)	Wang	03-2008
(US 5,054,077)	Suzuki	10-1991
(US 6,396,549 B1)	Weber	05-2002
(US 4,464,781)	Kaneko et al	08-1984
(US 6,311,155 B1)	Vaudrey et al	10-2001
(US 6,965,676 B1)	Allred	11-2005
(US 5,048,091)	Sato et al	09-1991
(US 7,373,650 B1)	Rodriguez et al	05-2008

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 32, 34-37, 46-48 and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang (US 7,349,548 B2).

With respect to claim 32, Wang discloses a device, comprising: a first input adapted to receive a first audio signal (fig.1 #10a); a second input adapted to receive a second audio signal (fig.1 #10b); a selection device (fig.1 #20,22,14) adapted to receive a user selection signal and in response thereto to select one of the first and second audio signals as a main audio signal; and to select another of the first and second audio signals as an auxiliary audio signal (col.5 ln.6-20); and an automatic adjustment unit (fig.1 #12) adapted to receive the auxiliary audio signal and to receive an auxiliary level control signal derived from the main audio signal, and in response thereto to automatically adjust a level of the auxiliary audio signal to have a particular ratio with respect to a level of the main audio signal (col.4 ln.56-67, col.5 ln.1-5).

With respect to claim 34, Wang discloses the device of claim 32, further comprising a main audio adjustment unit (fig.1 #16) adapted to receive a main level control signal and in response thereto, to adjust the level of the main audio signal.

With respect to claim 35, Wang discloses the device of claim 34, and wherein the selection device comprises: a first input adapted to receive an output of the main audio adjustment unit (fig.1 "signal from 12 to 14"); a second input adapted to receive an output of the auxiliary audio adjustment unit (fig.1 "different signal from 12 to 14"); a third input adapted to receive the main level control signal (fig.1 "signal from 20 to 12"); and a fourth input adapted to receive the user selection signal (fig.1 "signal from 22 to 20"), wherein in response to the user selection signal, the selection device supplies the

auxiliary level control signal as a control input to the auxiliary audio adjustment unit, and supplies the main level control signal as a control input to the main audio adjustment unit (col.4 ln.56-67, col.5 ln.1-5).

With respect to claim 36, Wang discloses the device of claim 32, wherein the particular ratio is stored in a memory of the device (fig.1 #24, col.4 ln.33-55).

With respect to claim 37, Wang discloses the device of claim 36, wherein the memory stores a plurality of ratios, and the device selects one of the ratios to be the particular ratio (fig.1 #24, col.4 ln.33-55).

With respect to claim 46, Wang discloses a method, comprising: receiving a first audio signal (fig.1 "signal from #10a"); receiving a second audio signal (fig.1 "signal from #10b"); receiving a main level control signal (fig.1 "signal from #20 to #12"); receiving a user selection signal (fig.1 "signal from #22") identifying a selected one of the first and second audio signal to be a main audio signal (col.5 ln.6-20), the other of the first and second audio signals being non-selected; in response to the user selection signal, connecting the selected one of the first and second audio signals to a main audio adjustment unit (fig.1 #12a), and connecting the non-selected one of the first and second audio signals to an auxiliary audio adjustment unit (fig.1 #12b); adjusting a level of the main audio signal by means of the main audio adjustment unit in response to the main level control signal; and automatically adjusting a level of the auxiliary audio signal by means of the auxiliary audio adjustment unit to have a particular ratio with respect to the level of the main audio signal (col.4 ln.56-67, col.5 ln.1-5).

With respect to claim 47, Wang discloses the method of claim 46, further comprising retrieving the particular ratio from a memory device (fig.1 #24, col.4 ln.33-55).

With respect to claim 48, Wang discloses the method of claim 47, further comprising: storing a plurality of ratios in the memory device; and selecting one of the ratios to be the particular ratio (fig.1 #24, col.4 ln.33-55).

With respect to claim 51, Wang discloses the method of claim 46, further comprising: determining an actual ratio of the level of the auxiliary audio signal and the level of the main audio signal; and comparing the actual ratio to the particular ratio; and controlling the gain of an adjustable gain amplifier in the auxiliary audio adjustment unit to make the actual ratio equal to the particular ratio (col.4 ln.33-55).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Suzuki (US 5,054,077) and in further view of Weber (US 6,396,549 B1).

With respect to claim 16, Wang discloses a device for controlling the sound levels of a group of audio channels having a main channel (MC)(fig.1 #10a) and at least one auxiliary channel (AC1)(fig.1 #10b) which can be rendered simultaneously, the device including user controlled selection means (fig.1 #20,22,14) for selecting the main channel (col.5 ln.6-20), and automatic level adjustment means (fig.1 #12) for adjusting the sound level of the at least one auxiliary channel relative to the main channel (col.4 ln.56-67, col.5 ln.1-5). Wang does not disclose expressly a first user-operable control device for selecting the main channel (MC); and a second user-operable control device which responds to a user control to toggle among a plurality of pre-set relative sound level ratios between the main channel (MC) and the at least one auxiliary channel (AC1).

Suzuki discloses a first user-operable control device for selecting the main channel (MC) (fig.1 #31); and a second user-operable control device (fig.1 #32) which responds to a user control to toggle among a plurality of pre-set relative sound level ratios between the main channel (MC) and the at least one auxiliary channel (AC1) (col.3 ln.4-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to provide the first and second user-operable control devices of Suzuki to control the levels of the main and auxiliary signals of Wang. The motivation for doing so would have been to allow the user to control the ratio of levels between the output signals such a selected main channel may be increased relative to any auxiliary channel. This would allow a user to boost desired signals such as from a desired source.

Wang and Suzuki do not disclose expressly wherein the device is used with a remote control device.

Weber discloses a remote control unit (fig.1 #1) to be used with a volume control device (fig.1 #2) comprising selection interface components (fig.1 #5) for selecting a main channel (col.9 ln.52-59). At the time of the invention it would have been obvious to a person of ordinary skill in the art use the remote control unit of Weber to control the channels of Suzuki. The motivation for doing so would have been to allow a user to control the invention of Suzuki from a distant position.

With respect to claim 30, Wang discloses the remote control unit of claim 16, wherein the second user-operable control device is a toggle stick (Suzuki: fig.1 #40) configured such that when a user moves the toggle stick in a first direction, the device switches to a one of the plurality of pre-set relative sound level ratios that is greater than a pre-set relative sound level ratio that was selected prior to moving the toggle stick in the first direction, and when the user moves the toggle stick in a second direction opposite the first direction, the device switches to a one of the plurality of pre-set relative sound level ratios that is less than a pre-set relative sound level ratio that was selected prior to moving the toggle stick in the second direction (Suzuki: col.4 ln.5-56). It is clear that when the toggle stick of the fader is moved in either direction the ratios of levels with respect to the auxiliary channels also changed in a pre-set manner.

With respect to claim 31, Wang discloses the remote control unit of claim 16, wherein the second user-operable control device is a toggle stick (Suzuki: fig.1 #40) configured such that when a user moves the toggle stick, the device temporarily selects

a new one of the plurality of pre-set relative sound level ratios that has a different value compared to a pre-set relative sound level ratio that was selected prior to moving the toggle stick, and after a fixed period of time, automatically selects again the pre-set relative sound level ratio that was selected prior to moving the toggle stick (Suzuki: col.4 ln.5-56). It is clear that each toggle stick of each fader operates in the manner according the disclosure of column 4, such that the movement of the toggle stick effects the pre-set ratios of the channels.

Claims 33 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Kaneko et al (US 4,464,781).

With respect to claim 33, Wang discloses the device of claim 32, wherein the selection device comprises: first and second inputs adapted to receive the first and second audio signals (fig.1 "inputs from 10"), respectively; a first output adapted to output the main audio signal and the auxiliary audio signal (fig.1 "output of #14"). Wang does not disclose expressly wherein the selection device comprises a first and second output.

Kaneko discloses wherein a selection device comprises first and second outputs (fig.1 "front and rear"), and a switching device (fig.1 #16L,R) adapted, in response to a user selection to selectively connect the first input to one of a first and second output, and to selectively connect the second input to another one of the first and second outputs. At the time of the invention it would have been obvious to a person of ordinary skill in the art to provide a multiple outputs and a switching device for selecting the

outputs to the device of Wang as provided by Kaneko. The motivation for doing so would have been to reproduce each signal by a different audio transducer, such that each sound emanates from a different direction. Such a system would add depth to the reproduced signal.

With respect to claim 43, Wang discloses the device according to claim 32, however does not disclose expressly a first output for outputting the main audio signal to a first transducer; and a second output for outputting the auxiliary audio signal to a second transducer separate and spaced apart from the first transducer.

Kaneko discloses a multi-channel level adjustment device wherein each channel (fig.1 "Left, Right Channel") are rendered by different transducers (fig.1 #12R,L, 15R,L). At the time of the invention it would have been obvious to a person of ordinary skill in the art to output each channel of Wang to different loudspeakers as performed by Kaneko. The motivation for doing so would have been to accurately reproduce the audio signals according to the position of the sound source. For example, sound of a right channel should be reproduced on the right side of a listener.

Claims 38 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Vaudrey et al (US 6,311,155 B1).

With respect to claim 38, Wang discloses the device of claim 37, however does not disclose expressly wherein the device selects one of the ratios to be the particular ratio in response to metadata that identifies a type of audio content included in at least one of the main audio signal and the auxiliary audio signal.

Vaudrey discloses a device that selects the audio level in response to metadata that identifies the type of audio content included in the signal (col.22 ln.23-63). At the time of the invention it would have been obvious to a person of ordinary skill in the art to adjust the signal of Wang according to encoded metadata as performed by Vaudrey. The motivation for doing so would have been to reproduce the audio signal as originally intended prior to encoding of the signal.

With respect to claim 49, Wang discloses the method of claim 48, however does not disclose expressly wherein selecting one of the ratios to be the particular ratio comprises: receiving metadata that identifies a type of audio content included in at least one of the main audio signal and the auxiliary audio signal; and selecting the particular ratio in response to the metadata.

Vaudrey discloses a device that selects the audio level in response to metadata that identifies the type of audio content included in the signal (col.22 ln.23-63). At the time of the invention it would have been obvious to a person of ordinary skill in the art to adjust the signal of Wang according to encoded metadata as performed by Vaudrey. The motivation for doing so would have been to reproduce the audio signal as originally intended prior to encoding of the signal.

Claims 39, 50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2).

With respect to claim 39 and 50, Wang discloses the device and methods of claims 37 and 48, however does not disclose expressly wherein the device or method

determines a frequency spectrum characteristic of at least one of the main audio signal and the auxiliary audio signal and in response thereto selects one of the ratios to be the particular ratio. Official Notice is taken that it is well known in the art to determine and split and audio signals according to frequency ranges such that the signal is amplified according to the determined frequency spectrum. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use amplify the signal of Wang according to its frequency spectrum. The motivation for doing so would have been to boost certain frequency bands relative others, such as those containing speech.

With respect to claim 52, Wang discloses the method of claim 51, however does not disclose expressly further comprising: calculating a signal power of the auxiliary audio signal over a set time period; and calculating a signal power of the main audio signal over the set time period. Official Notice is taken that it is well known in the art to calculate the power of signals when comparing characteristics such as level over a period of time. At the time of the invention it would have been obvious to a person of ordinary skill in the art to calculate the power of the audio signals of Wang in order to determine that the selected main signal comprises a greater average power than the unselected auxiliary channels. This would ensure that the appropriate signal gains are applied to each channel.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Allred (US 6,965,676 B1).

With respect to claim 40, Wang discloses the device of claim 32, however does not disclose expressly wherein the automatic adjustment unit comprises: a level control unit; and an adjustable gain amplifier adapted to amplify the auxiliary audio signal, wherein the level control unit is adapted to provide a gain control signal for controlling a gain of the adjustable gain amplifier.

Allred discloses an automatic adjustment unit comprising: a level control unit (fig.2 #24,30); and an adjustable gain amplifier (fig.2 #32) adapted to amplify the auxiliary audio signal, wherein the level control unit is adapted to provide a gain control signal (fig.2 "Ac") for controlling a gain of the adjustable gain amplifier (col.4 ln.11-40). At the time of the invention it would have been obvious to a person of ordinary skill in the art that the adjustment units of Wang would include an adjustable gain amplifier controlled by the control signal from controller #20, such as the adjustable amplifiers of Allred. The motivation for so doing so would have been to realize a gain adjustment as controlled by the controller #20.

Claims 44 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Sato et al (US 5,048,091).

With respect to claim 44, Suzuki discloses the device according to claim 32, however does not disclose expressly wherein the automatic adjustment unit is adapted to change the particular ratio from a first value to a second value temporarily in response to a characteristic being present in audio content included in at least one

of the main audio signal and the auxiliary audio signal, and automatically changing the particular ratio back to the first value when the characteristic is no longer present in the audio content.

Sato discloses a level adjustment means (fig.1 “A,B”) arranged for speech detection and speech level control (col.3 ln.9-17) such that when a characteristic is detected within the signal such as speech, the means changes the signal level of the output signal . At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the speech detection and level control means of Sato in the level adjustment means of Wang. The motivation for doing so would have been to reproduce speech content of each channel so as the speech is not drowned out by other audio signals, such as background music.

With respect to claim 53, Wang discloses the method of claim 47, however does not disclose expressly further comprising: changing the particular ratio from a first value to a second value temporarily in response to a characteristic being present in audio content included in at least one of the main audio signal and the auxiliary audio signal; and automatically changing the particular ratio back to the first value when the characteristic is no longer present in the audio content.

Sato discloses a level adjustment means (fig.1 “A,B”) arranged for speech detection and speech level control (col.3 ln.9-17) such that when a characteristic is detected within the signal such as speech, the means changes the signal level of the output signal . At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the speech detection and level control means of Sato in

the level adjustment means of Wang. The motivation for doing so would have been to reproduce speech content of each channel so as the speech is not drowned out by other audio signals, such as background music.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Rodriguez et al (US 7,373,650 B1)

With respect to claim 45, Wang discloses the device of claim 32, however does not disclose expressly further comprising a video display screen, wherein the video display screen is adapted to be divided into at least a first part for displaying a first video program associated with the first audio signal, and a second part for displaying a second video program associated with the second audio signal.

Rodriguez discloses a video display screen (fig.5E #225), wherein the video display screen is adapted to be divided into at least a first part for displaying a first video program, and a second part for displaying a second video program (col.29 ln.10-21). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the audio control circuit of Wang with a screen-in-screen video setup such as provided by Rodriguez. The motivation for doing so would have been to allow a user to individually control the volume of each audio signal associated with each video window. This would allow a user to increase or decrease the volume of a desired program.

(10) Response to Argument

With respect to the independent claims 32 and 46, the Appellant argues that the prior art reference Wang (US 7,349,548) does not disclose wherein the device or method performed by the device "automatically adjusts a level of the auxiliary audio signal to have a particular ratio with respect to a level of the main audio signal". The Examiner disagrees and maintains the position set forth in the Final Rejection dated May 22, 2009. Wang discloses a multi-channel (fig.1 #10a-10c) audio system, wherein a user may select a single channel as the main channel, such that all unselected channels or "auxiliary channels" are lowered to a setup volume level previously stored in a memory location (col.5 ln.21-29). The Examiner has interpreted this lowering of the unselected channels to the setup volume level as an automatic level adjustment, such that the setup volume level has a particular ratio with respect to the selected main channel signal level. It is implied that any level at which the unselected signals are lowered to will have a particular ratio with respect to any other level of the selected main signal. Therefor Wang anticipates the automatic level adjustments defined in the independent claims 32 and 46.

With respect to independent claim 16, the Appellant argues that the combination of Wang, Suzuki and Weber does not disclose "a second user-operable control device which responds to a user control to toggle among a plurality of pre-set relative sound level ratios between the main channel (MC) and the at least one auxiliary channel (AC1)." As discussed above, Wang discloses a device that allows a user to select a main

channel from a plurality of input channels, such that the unselected channels ("auxiliary channels") are lowered to a setup level using a first and second user-operable control device (fig.1 #12a,12b) having a particular ratio (i.e. setup volume level) with respect to the main channel. Wang does not disclose expressly wherein the control device responds to a user control to toggle among a plurality of pre-set relative sound level ratios between the main channel and the auxiliary channel, the ratios of Wang are fixed. The Examiner has relied upon Suzuki (US 5,054,077) in order to provide a user controlled toggling between pre-set relative sound level ratios between audio channels, as provided in figure 1. The fader switches (fig.1 #31,32,33) of Suzuki would be used in each volume controller #12a-c of Wang. The motivation for using such toggling/fader switches would have been to allow a user to control the level at which the unselected channels of Wang are reduced to such that the setup volume level may be changed. The Examiner has interpreted the fader switches of Suzuki as toggling devices that would allow for the adjustment of each channel level to have a "preset" ratio with respect to the main channel signal at a designated dB level. The term "preset" is defined as "to adjust (a connector, switch or the like) so that when activated it will perform a designated function". From this it is clear that the faders of Suzuki may be toggled or adjusted to different positions such that when activated they perform the designated function of setting a level ratio between the unselected auxiliary channels and main channel of Wang. Hence the teachings of Wang in view of Suzuki anticipate the present disclosure of claim 16.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jason R Kurr/

Examiner, Art Unit 2614

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/Vivian Chin/

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